Developmental and Comparative Immunology

Editor-in-Chief: Edwin L. Cooper

Author and Keyword Index Volume 15, 1991



PERGAMON PRESS

New York ● Oxford ● Seoul ● Tokyo

DEVELOPMENTAL and COMPARATIVE IMMUNOLOGY (DCI)

ONTOGENY • PHYLOGENY • AGING

The Official Journal of the International Society of Developmental and Comparative Immunology

"The first objective in a serious approach to immunology should be to obtain a broad understanding, with a minimum of detail, of how immunology fits into the pattern of biology-of the way in which the immune system evolved, its function and coordination with other body systems, and its development from the embryo onwards. At the same time, such an outline should provide an adequate background for easy application of immunologi ideas to the detail of practical immunological work in public health, clinical and veterinary practice."—Sir Macfarlane Burnet (Immunology, Aging and Cancer, San Francisco: W.H. Freeman and Company, 1976, p. 62)

AIMS AND SCOPE

Developmental and Comparative Immunology (DCI), an international journal, will serve as a world forum for the rapid dissemination of original research that treats the development and maturation of the immune system in the broadest sense, emphasizing ontogenetic (including aging) and phylogenetic aspects. Contributions that deal with the problem of immunological diversification as revealed by the immune systems of various animal models will be welcome. The journal is expected to encompass mechanisms of recognition of self and on-self at the cellular, molecular, and organismic levels, cellular interactions, immunologic molecules, immunogenetics, neuroendocrinimmunology and origins of antibody diversity and immunologically relevant maternal fetal interactions. DCI will also consider papers that deal with precursors, homologs, cells and molecules of more primitive species which are proving to be useful tools for probes into problems of systems of advanced animals, e.g., molluscan lectins. Such animal molecules or models should have potential biomedical application. Authors are requested to send their manuscripts to the Editor-in-Chief who requires that all contributions (full-length articles, brief communications, letters to the Editor-in-Chief) be appraised by two referees, DCI will also publish other communications such as theoretical papers and mini-reviews including references and illustrations

Active members of the International Society of Developmental and Comparative Immunology as part of their membership—Contact Dr. Michael Balls, Department of Human Morphology, Medical School, University of Nottingham, Nottingham NG7 2UH.

FOUNDING EDITOR-IN-CHIEF

Edwin L. Cooper, USA

ASSOCIATE EDITORS Clemson University, USA

Univ. of Durham, UK

Research Institute of

Glick. B.

Horton, J. D.

Miller, M.

USA

Quaranta, V.

Bayne, C. J. Oregon State University, USA

Clem, L. W. Univ. Mississippi Medical Center, USA

Univ. Rochester School of Medicine. USA

Dieterlen-Lievre, F. Institut d'Embryologie, France

Chadwick, J. S., Canada Dunn, P., USA El-Ridi, R., Egypt Evans, D. L., USA Glick, B., USA Habicht, G., USA

Egberts, E., The Netherlands Kaattari, S., USA

> Manning, M. J., UK, Past-President Ruben, L. N., USA, President Clem, L. W., USA, President-Elect

Tomonaga, S. Yamaguchi University, Japan

Warr, G. W. Medical Univ. South Carolina, USA

Yoshino T. Univ. of Wisconsin, USA

Scripps Clinic, USA **EDITORIAL BOARD**

Beckman Research Institute,

Karp, R. D., USA Kaufman, J. F., Switzerland Litman, G. W., USA Marchalonis, J. J., USA McKinney, C., USA Muramatsu, S., Japan Parrinello, N., Italy Ratcliffe, N. A., UK

Rinkevich, B., Israel Sminia, T., The Netherlands Soderhall, K., Sweden Valembois, P., France Vogel, C. W., USA Wick, G., Austria Zapata, A., Spain

OFFICERS OF ISDCI

Balls, M., UK, Secretary-Treasurer Secombes, C., UK, Secretary Education

Editorial Assistant: H. Tournaire

Editorial Office: Edwin L. Cooper, Department of Anatomy, University of California, Los Angeles, CA 90024, USA, (213) 825-9492; FAX (213) 825-2224

Publishing, Subscription and Advertising Offices: Pergamon Press Inc., 395 Saw Mill River Road, Elmsford, NY 10523, USA, INTERNET "PPI@PERGAMON.COM"; and Pergamon Press plc, Headington Hill Hall, Oxford OX3 0BW, England.

Published Bimonthly, Annual Institutional Subscription Rate (1992): £290.00 (\$465.00), Two-year Institutional Rate (1992/93): £551.00 (\$883.50), Members of International Society of Developmental and Comparative immunology may order personal subscriptions at a concessional rate; details of these rates are available upon request. Sterling prices are definitive. US dollar prices are quoted for convenience only, and are subject to exchange rate fluctuation. Prices include postage and insurance and are subject to change without notice. Back issues of all previously published volumes, in both hard copy and on microform, are available direct from Pergamon Press. Subscription rates for Japan are available on request.

Copyright © 1991 Pergamon Press plc

Copyright Notice: It is a condition of publication that manuscripts submitted to this journal have not been published and will not be simultaneously submitted or published elsewhere. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature and translations. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise, without permission in writing from the copyright holder.

Photocopying Information for users in the U.S.A.: The Item-Fee Code for this publication indicates that authorization to photocopy items for internal or personal use is granted by the copyright holder for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service provided the stated fee for copying, beyond that permitted by section 107 or 106 of the United States Copyright Law, is paid. The appropriate remittance of \$3.00 (\$0.50 for review journals) per copy per article is paid directly to the Copyright Clearance Center inc., 27 Congress Street, Salem, MA 01970.

Permission for other use: The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for copying. Please contact the Subsidiary Rights Manager at either Pergamon Press Inc., or Pergamon Press plc.

The Item-Fee Code for this publication is: 0145-305X/91 \$3.00 + .00.

AUTHOR INDEX Volume 15, 1991

Adema, C. M., 17 Ainsworth, A. J., 53, 201 Akiyama, Y., 83 AlDeeb, S., 443 Aleksandersen, M., 413 Amen, R. I., 105 Arizza, V., 219 Arkoosh, M. R., 279 Azumi, K., 1, 9

Banerjee, A., 213
Barnett, J. A., 117
Basu, P. S., 213
Bayne, C. J., 135
Bilej, M., 263
Biswas, M., 227
Bodine, A. B., 383
Boyd, R. L., 369
Brookman, J. L., 33
Brown, R. A., 153
Brożek, C. M., 401

Capley, G., 53 Chakravarty, A. K., 423 Charles, R., 117 Clem, L. W., 41 Cohen, N., 209 Čolić, M., 443 Croix, D. A., 189

Damjanović, M., 443 Datta, P. K., 213 Datta, T. K., 213 de Lange-de Klerk, E. S. M., 105 Desveaux-Chabrol, J., 341 Dexiang, C., 201 Dieterlen-Lièvre, F., 341

Fahey, K. J., 369 Flory, C. M., 135

Gendreau, M., 341 Greenlee, A. R., 153

Haddad, E. E., 65 Hamuro, J., 83 Haynes, L., 123 Higgins, D. A., 357 Horton, J. D., 307, 319 Horton, T. L., 319 Hughes, T. K., Jr., 117

Infante, A. J., 189 Isaković, K., 443 Ishii, S-I., 1, 9

Janse, E. M., 437 Jensen, L. B., 173 Jeurissen, S. H. M., 437

Kaattari, S. L., 279 Kiepurski, A., 349 Kimpton, W. G., 393 Koch, C., 173

Landsverk, T., 413 Lassegues, M., 27 Lee, T.-H., 329 Ley, R. D., 401

Mandal, C., 227 Mashaly, M. M., 65, 181 McKinney, E. C., 123 Meuleman, E. A., 17, 105 Mićić, M., 443 Mitrangas, K., 369 Mookerjea, S., 227

Nagpurkar, A., 227 Nicander, L., 413

Ozeki, S., 9

Parrinello, N., 219 Pascual, D. W., 41 Pathak, J. P. N., 99 Petersson, A., 143 Pike, A. W., 295 Pilström, L., 143 Pospíšil, R., 263

Quere, P., 73

Raftos, D. A., 93 Ramm, H. C., 369 Ratcliffe, N. A., 33 Redding, T. S., 189 Rejnek, J., 263, 269 Rice, C. D., 431 Ristow, S. S., 153 Ritchie, P., 319 Roch, P., 27 Rodgers, R. S., 383 Rombout, J. H. W. M., 349 Rowland, S. M., 383 Rowley, A. F., 33

Samples, N. K., 189 Sarkar, S. K., 423 Schimmenti, S., 219 Scott, T. R., 383 Secombes, C. J., 295 Seneque, S., 393 Sharp, G. J. E., 295 Sieminski-Brodzina, L. M., 181 Sijtsma, S. R., 349 Sminia, T., 17, 105 Smith, E. M., 117 Smith, V. J., 251 Söderhäll, K., 251 Staute, K., 393 Stefano, G. B., 117 Stone, W. H., 189 Suzuki, M., 83

Tempelis, C. H., 329 Thorbecke, G. J., 73 Thorp, B. H., 393 Tijnagel, J. M. G., 105 Tomana, M., 269 Tučková, L., 263, 269 Turner, S. L., 319

Valembois, P., 27 van der Knapp, W. P. W., 17, 105 van der Zijpp, A. J., 349 van Deutekom-Mulder, E. C., 17 van Ginkel, F. W., 41 van Roozelaar, D., 437 VandeBerg, J. L., 189 Varley, C. A., 307

Ward, H. A., 369 Waterstrat, P. R., 53 Weeks, B. A., 431 West, C. E., 349 Wiesner, A., 241 Wilson, T. J., 369 Wolke, R. E., 165

Yokosawa, H., 1, 9

Ziegenfuss, M. C., 165 Zikán, J., 269

KEYWORD INDEX Volume 15, 1991

Absorption, 437
Accessory cells, 135
Achatina fulica, snail, 227
Affinity, 279
Aflatoxin B₁, 383
Agammaglobulinemia, 73
Agglutinin, 99, 227
Allografts, 189
Annelids, 27
Anti-T3 mAb, 83
Antibacterial, 27
Antibodies, 41
Antigen-binding molecule, 263
Ascidian, 1, 9

B cells, 393, 423 B lymphocytes, 369 Bacteria-agglutination, 9 Bactericidal effect, 53 Bat, 423 Blood cells, 251 Blood, 251 Bursa, 369

C3 convertase, 173 C-reactive protein, 227 Calcium flux, 431 Carassius auratus, 165 Carbon, 437 Catfish neutrophils, 53 CD8⁺ T cells, 73 Cell cycle analysis, 383 Cellular apoptosis, 153 Cellular cytotoxicity, 17 Cellular defense, 241 Cellular necrosis, 153 Channel catfish, 41 Chemiluminescence, 135, 431 Chemiluminescent response, 53 Chemoattractant, 295 Chemokinesis, 295 Chemotaxis, 295 Chicken lymphoblast, 329 Chicken(s), 65, 73, 181, 383, 437 Chromium release assay, 153 Ciona, 251 Clone size, 279 Cod, 143

Coelomic fluid, 27, 269
Comparative immunity, 189
Complement factor B, 173
Con A, 329
Cortisone-resistant thymocytes, 83
Cytokine, 401
Cytokine bioassays, 319
Cytotoxic mechanisms of trout NCC, 153
Cytotoxicity, 181

Diphyllobothrium, 295
Distribution, 413
DNA fragmentation assay, 153
Double negative thymocytes, 83
Duck, 357

Earthworms, 27, 263, 269 Edwardsiella ictaluri, 53 ELISA, 279 Embryonic transfer, 341 Escherichia coli, 241 Evolution, 173 Evolution of immunity, 123

Fab fragments, 41
Fetal thymocytes, 83
Fine specificity, 279
Fish, 165
Flow cytometry, 307, 319
Fluorescent microspheres, 165

Gadus morhua, 143 Galleria mellonella, 241 Graft-versus-host reaction, 341 Growth hormone, 65 Gut, 437

Halys dentata, 99
Heat stable lectins, 99
Hemagglutinin, 9
Hemal nodes, 393
Hemimetabolous insect, 99
Hemocyte(s), 1, 9, 17, 33, 105, 251
Hemolymph, 213, 227
Hemolysins, 27
Heteroagglutinin, 99
Host defense mechanisms, 123

Humoral defense, 241 Hydrogen peroxide, 201

IBDV, 369 IL-1 (Interleukin-1), 83, 117, 401 IL-2 (Interleukin-2), 83 IL-6 (Interleukin-6), 83 Immune phylogeny, 251 Immunocompetent cells, 423 Immunodepression, 369 Immunoglobulin properties, 143 Immunoglobulins, 41 Immunohistology, 307 Immunological memory, 279 Immunology, 393, 401 Immunomodulation, 105 Immunoparasitology, 105 Immunopharmacology, 135 Immunoregulation, 135 Induction of immunity, 241 Insect immunity, 241 Invertebrate immunity, 251 Invertebrate immunology, 269 Invertebrates, 27, 117

Kinetics, 165

Large intestine, 413
Latex, 241
Lectins, 219
Leucocyte migration, 295
Limiting dilution analysis, 279
Lipopolysaccharide, 1, 9, 33, 117
Locusts, 33
Lymnaea stagnalis, 17, 105
Lymph nodes, 393
Lymphocytes, 357, 393
Lymphoid follicles, 413
Lymphoid organs, 437
Lymphokine receptor, 329

Macrophage activation, 431
Macrophage aggregates, 165
Macrophage-mediated cytotoxicity, 123
Macrophages, 423
Mannose-6-phosphate inhibition of
NCC, 153
Marsupial, 401
Melanin, 213
Membrane fluidity, 423
Metalloprotease, 1
Metamorphosis, 99

MHC, 189

Micrococcus luteus, 241

Micrococcus luteus, 241

Micrococcus luteus, 241

Micrococcus luteus, 383

Mitogen stimulation, 383

Mitogenesis, 135

Mitogens, 357

Mixed leucocyte culture, 319

Mixed lymphocyte reaction, 189

Molluscs, 17

Monoclonal antibody(ies), 329, 393, 443

Monodelphis domestica, 189

Mononuclear cells, 181

Mytilus edulis, 117

Natural cell-mediated cytotoxicity, 65 Natural killing, 123 NCC morphology, 153 Neuroimmunology, 135 Neurotransmitters, 135 Neutrophil, 201 Nitroblue tetrazolium, 201 NK cells, 65, 181

Oligosaccharides, 269 Oncorhynchus mykiss, 295 Ontogenesis, 443 Ontogeny, 413 Opossum, 401 Oxygen radicals, 17

Pepsin, 41
Peripheral blood, 181
Phagocytosis, 17, 53, 105, 201
Phenoloxidase, 213, 251
Phosphorylcholine, 227
Phosphorylcholine-binding protein, 227
Plasma, 33
Polymorphism, 27
Precursor frequency, 279
Prophenoloxidase activation, 33
Protease inhibitor, 213
Proteolysis, 41

Rainbow trout, 135, 279, 295 Rat thymus, 443 Reactive oxygen intermediates, 431 Regulation of cytotoxicity, 123 Release, 219 Respiratory burst, 135 Response to stimulation, 263

Scanning electron microscopy (EM), 181, 423

Schistosome-snail compatability, 105 Schistosomes, 105 Scorpion, 213 Selected lines, 383 Serum, 143 Shark leukocytes, 123 Sheep, 393, 413 sIg+ & sIg- cells, 319 SpA-binding protein, 269 Spontaneous cytotoxicity, 123 Stromal cells, 369 Structure, 413 Superoxide, 201 Suppression of cytotoxicity, 123 Suppressor T cells, 73 Synergism, 357

T cells, 383, 393, 423 T-cell development, 307 T-cell marker distribution, 307 T-cell mitogen, 319 TE cells, 443 Thymectomy, 307, 319 ³H-thymidine uptake, 383
Thymocyte maturation, 83
Thymocytes, 383
Thymus implantation, 307
Thyrotropine releasing hormone, 65
Transformation, 357
Transmission electron microscopy, 181
Tributyltin, 431
Trichobilharzia ocellata, 105
Triiodothyronine, 65
Trypsin, 41
Tumor, 181
Tumor cells, 65
Tumor necrosis factor, 117
Tunicates, 219

Vertebrate erythrocytes, 99 Vitamin A deficiency, 349

Xenopus, 307, 319

Yolk, 437